C-A OPERATIONS PROCEDURE MANUAL

C-A TPL 06-08 TEMPORARY PROCEDURE TO UTILIZE THE HIGH INTENSITY PROTON ION SOURCE CONCURRENTLY FOR BOTH THE BLIP AND RHIC PROGRAMS

Text Pages 2 through 3

Hand Processed Changes

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Approved by:_____ _____
Assoc. Chairman for ESHQ Date

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C-A TPL 06-08 TEMPORARY PROCEDURE TO UTILIZE THE HIGH INTENSITY PROTON ION SOURCE CONCURRENTLY FOR BOTH THE BLIP AND RHIC PROGRAMS

1. Purpose

3.1 The purpose of this procedure is to provide instructions to in order to limit the number of protons from the high intensity source so that it may be used for RHIC operation.

3.2 This procedure is to be used in order to continue RHIC proton operation using the Linac high intensity proton source e.g. when the polarized proton source has failed or requires maintenance. A necessary condition for the use of this procedure is that the "cross interlock" is operational.

3.3 This procedure may be used during periods of concurrent NSRL-RHIC proton operations.

2. Responsibilities

2.1 The Operations Coordinator is responsible for the execution of this procedure.
2.2 Linac staff shall implement the equipment changes in building 930, called for in this procedure. In the future, MCR operators and CAS technicians may be trained to perform this procedure.

4. Prerequisites

4.1 The "cross interlock" (AGS B15 current transformer) is operational.

4.2 The target group for this procedure is the Linac Operations Coordinate and his designees.

4.3 The training requirement for this procedure is a walkthrough with the Linac Operations Coordinator.

4.4 The minimum number of staff members that need to be trained in order for this procedure to be effective is one – the Linac OC.

4. Precautions

1.0 Use of Attachment 8.1 will not limit the proton flux to BLIP
2.0 Do not turn off or defeat the polarized source until you are convinced that protons are delivered from the high intensity source (and vice versa)

5. Procedure

1.0 To change from the p^ source to the high intensity source do the following:
1.0.0 Use the "Operator" checklist in Attachment 8.1 to change between the p^ ion source and the high intensity ion source.
2.0.0 To restore operation using the polarized proton source retrace the checklist (Attachment 8.1) starting at step 1

6. Documentation
1.0 Attachment 8.1
2.0 Document Training by signing TPL06-08 training sign off sheet in MCR
7. References:
1.0 None
8. Attachments:
8.1 "Operator" Check List for RHIC Injection Using the Unpolarized H^- Source

C-A TPL 06-08 Attachment 8.1

"OPERATOR" CHECK LIST FOR RHIC INJECTION USING THE UNPOLARIZED H⁻ SOURCE

To change from the p^ source to the high intensity source do the following :
[**TO RESTORE THE P^ SOURCE USE THE BLUE INSTRUCTION**]:

_____ **In the RHIC AGS MCR** - Close LtB Beam Stops (beam stop 1 & 2 or beam stop 2 & dh1 power supply)

Go to building 930 (Linac) and do the following

_____ **In the Linac Control Room (LCR)** -- Close the 0-9 beam stop, the Tank 1 Beam stop, and the High Energy Beam stop, using the push-buttons on the panel found in rack F2.

_____ **Go Downstairs to the racks to the "beam-right" side of LEBT**. – Turn off [**ON**]LEBT Solenoid 3 (LOP.SP21) power supply. In the (left) adjacent rack, turn off [**ON**] the OPPIS LEBT Bending Magnet Power supply (LOP.BM2) – The **EMI –SCR** supply.

_____ **In the LCR-- Remove [Install] the strobe cable on the back of the booster to Linac interface bucket J30 in Rack F2**

_____ **In the LCR** – Press the pushbuttons to open the 0-9 beam stop and Tank #1 Beam stop. Booster Users are now inhibited. User #5 beam will be visible on Tank #9 "Polarized Transformer" at a level of ~ 600 [**200**] micro-Amps.

Note: **Before tuning – save a /pet/Linac/pre_Injection file to restore p^ in the future**

_____ From pet -- detune [**TUNE**]solenoid **2** (LLI.SP6_SR) for Linac users 1,2,3,4,5 **Do not alter BLIP user 6**.

_____ in /pet/Linac/pre_Injection lower [**RAISE**] the commands to the solenoid LLI.SP6_SR

_____ stop detuning [**TUNING**]when you see 200 milli Volts (200 micro-Amps) [**600 mV**]on the Tank #9 "Polarized Transformer "
HPX1 is the top waveform on the Lecroy 9400A scope (calibration 1 volt = 1000 micro Amps)

Note **The maximum beam current from the high intensity source with the configuration called for in this checklist is ~ 4 milli Amps**

Note: **The settings for the above power supply should be the same for Linac Users one through five – copy any changes made on user #5 to the other booster users**

_____ Contact the MCR and ask the operator to open LtB beam stops 1 & 2 (or dh1 power supply)

Person completing checklist (print) _____

Date _____